



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2019-09-12-40 Date: 19-04-2019
 Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
 Address : Byatarayanapura Sub Division, BBMP, Bangalore.
 Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.
 Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010
 Customer's Reference : BBMP/EE/BTP/WO/75/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 15-04-2019
 Sample Type : Birla Super 53 grade
 Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification, IS 4031 (Part 1, 2, 3, 4, 5, 6, 11) 1988
 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
 IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6
 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
 IS 4031 Part 11, DETERMINATION OF DENSITY, Clause 6

Date of test : 16-04-2019

Environmental Conditions during test : Temperature: 26°C
 Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.76	—
2	Fineness by Air permeability method (m ² /kg, Min)	292.1	225m ² /kg, Min
3	Density (gm/cc)	3.12	—
4	Standard Consistency (%)	28.0%	Not specified
5	Initial Setting time	155 minutes	Not less than 30 minutes
6	Final Setting time	270 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

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Samples will be disposed after 90 days from the date of issue of test certificate

As per Ward No 6

Ref: 82-8A

RECEIVED
 19-04-2019
 17-04-2019
 16-04-2019



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 Quality Manager

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Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2019-09-12-40 **Date:** 14-05-2019

Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/75/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 15-04-2019

Sample Type : Birla Super 53grade

Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 6, Determination of Compressive Strength, Clause 6

Date of test : 16-04-2019

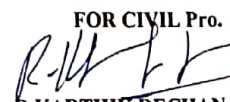
Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Compressive Strength			
Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm ²	Not less than 27 N/mm ²
2	7 Days	39.0N/mm ²	Not less than 37 N/mm ²
3	28 Days	58.5N/mm ²	Not less than 53 N/mm ²

Note:

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Quality Manager

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2019-09-12-40 Date: 19-04-2019

Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/75/2017-18

Source of Sample : Sample supplied by Agency

Sample condition : Satisfactory

Date of Receipt : 15-04-2019

Sample Type : 40mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 15-04-2019

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	244	244	1.6	98.4	90-100
3	20 mm	5432	5676	37.8	62.2	30-70
4	10 mm	4332	10008	66.7	33.3	10-35
5	4.75 mm	4654	14662	97.7	2.3	0-5
6	Pan	338	15000	100.0	0	—

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TEST REPORT ON COARSE AGGREGATES

Lab ID

:

CP-2019-09-12-40

Date: 19-04-2019

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	8.1	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	7.5	
3	Specific Gravity	2.61	—
4	Bulk Density(Loose) (Kg/l)	1.38	—
5	Bulk Density(Compacted) (Kg/l)	1.42	—
6	Water Absorption(%)	0.26	—

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Samples will be disposed after 90 days from the date of issue of test certificate



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Authorized Signatory
Quality Manager

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****End of Report****

29.04.2019
ಸಹಾಯಕ ಕಾರ್ಯದರ್ಶಿ
ಪ್ರಾಚಾರ್ಯನವರು ಉಪ ವಿಭಾಗ
ಮುಖ್ಯಮಂತ್ರಿ-24



TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2019-09-12-40 Date: 17-04-2019

Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010

Customer Reference : BBMP/EE/BTP/WO/75/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 15-04-2019

Sample Type/ Size : 20mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 15-04-2019

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	245	245	4.9	95.1	90-100
3	10 mm	2560	2805	56.1	43.9	25-55
4	4.75 mm	2033	4838	96.8	3.2	0-10
5	Pan	162	5000	100	0	-

ಇದರಲ್ಲಿ 1500 ಗ್ರಾಂ ಗಳು
ಪರೀಕ್ಷಿಸಲ್ಪಟ್ಟಿವೆ ಮತ್ತು
ಉಳಿದ 3500 ಗ್ರಾಂ ಗಳು
ಮಾನ್ಯತೆ ಪಡೆದಿವೆ - 24

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BANGALORE

Format No: CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID

CP-2019-09-12-40

Date: 17-04-2019

PHYSICAL PROPERTIES

PHYSICAL PROPERTIES			
Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.4	
3	Specific Gravity	2.65	—
4	Bulk Density(Loose) (Kg/l)	1.53	—
5	Bulk Density(Compacted) (Kg/l)	1.55	—
6	Water Absorption(%)	0.25	—
7	Aggregate crushing Value(%)	24.1	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	23.8	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

Note:

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Authorized Signature
Quality Manager

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2019-09-12-40 Date: 21/06/2019

Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/75/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 17-06-2019

Customer ID : Sump Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/06/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Sump Concrete	M20	14/06/2019	21/06/2019	149.25 X	22315	8.096	412.0	18.5	18.6
					149.52 X					
					151.21					
2	Sump Concrete	M20	14/06/2019	21/06/2019	150.73 X	22588	8.797	426.2	18.9	
					149.86 X					
					149.87					
3	Sump Concrete	M20	14/06/2019	21/06/2019	151.86 X	22842	8.965	423.3	18.5	
					150.42 X					
					150.56					

Note:

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2.0

Handwritten signatures and stamps:
 20.06.2019
 21.06.2019
 21.06.2019



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 Quality Manager

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Date: 12/07/2019

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TEST RESULTS OF STEEL

Lab ID : CP-2019-09-12-40 Date: 22-04-2019

Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06
Byatarayanapura Sub Division.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th
Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/75/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 20-04-2019

Sample Type : Sunvik

Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.

Date of test: : 20-04-2019

SLNo	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm ²)	(N/mm ²)	(%)		
1	Sunvik	Fe500	8	0.391	512	652	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory

Note:

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All information furnished by Customer Representative
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R KARTHIK RECHAN
Authorized Signatory
Quality Manager



TEST REPORT OF PHYSICAL REQUIREMENTS OF BRICKS

Lab ID : CP-2019-09-12-40 Date: 29-04-2019

Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/75/2017-18

Source of sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-04-2019

Identification Mark on Brick : Wire Cut Brick

Reference to BIS codes : IS 1077 : 1992(RA 2011) Common Burnt Clay Building Bricks- Specification
IS 3495 (Part 1 to 3) : 1992(RA 2011)
Method of Tests Burnt Clay Building Bricks
Part 1: Determination of Compressive Strength, (Cl 4.2.3)
Part 2: Determination of Water Absorption, (Cl 4.1.3)
Part 3: Determination of Efflorescence, (Cl 4)

Date of test : 23-04-2019

COMPRESSIVE STRENGTH

Sl.No.	Length (mm)	Breadth (mm)	Area (mm ²)	Failure Load (KN)	Compressive strength of individual bricks (N/mm ²)	Acceptability as per IS 1077:1992, Clause 7.1
1	228.13	109.98	25090	206.7	8.2	The bricks shall have a minimum average compressive strength for various classes as given in Table 1 of IS 1077: 1992. The compressive strength of any individual bricks shall not fall below the minimum compressive strength specified for the corresponding class of brick by more than 15%.
2	228.98	108.62	24872	197.6	7.9	
3	231.01	107.99	24947	201.3	8.1	
4	230.11	107.54	24746	199.5	8.1	
5	228.16	106.98	24409	194.6	8.0	
Average of 5 bricks					8.1	

ಇದರಲ್ಲಿ ಉಪಯುಕ್ತವಾದ ಮಾಹಿತಿಗಳು ಒಟ್ಟಾರೆ ಉಪಯುಕ್ತವಾಗಿರುತ್ತವೆ. ಇದರಲ್ಲಿ ಉಪಯುಕ್ತವಾದ ಮಾಹಿತಿಗಳು ಒಟ್ಟಾರೆ ಉಪಯುಕ್ತವಾಗಿರುತ್ತವೆ. ಇದರಲ್ಲಿ ಉಪಯುಕ್ತವಾದ ಮಾಹಿತಿಗಳು ಒಟ್ಟಾರೆ ಉಪಯುಕ್ತವಾಗಿರುತ್ತವೆ.

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Date



Lab ID : CP-2019-09-12-40
Sample ID No : #REF!

Date: 29-04-2019

WATER ABSORPTION:

Sl.No.	Dry Weight	Wet Weight	Water Absorption(%)	Acceptability as per IS 1077:1992, Clause 7.2
1	2.975	3.265	9.7	The water Absorption of bricks shall not be more than 20% by weight upto class 12.5 and 15% by weight for higher classes.
2	2.868	3.176	10.7	
3	2.906	3.196	10.0	
4	2.976	3.275	10.0	
5	2.875	3.218	11.9	
Average Water Absorption(%)			10.5	

EFFLORESCENCE:

Sl.No.	Length (mm)	Breadth (mm)	Area (mm ²)	Efflorescence	Acceptability as per IS 1077:1992, Clause 7.3
1	229.18	108.98	24976	Slight	The efflorescence shall not be more than 'moderate' upto class 12.5 and 'slight' for higher classes.
2	228.98	109.18	25000	Moderate	
3	228.18	108.39	24732	Slight	
4	230.19	107.98	24856	Moderate	
5	228.13	109.19	24910	Slight	

DIMENSIONS AND TOLERANCES

Sl.No.	Dimensions obtained for 20 bricks(mm)		Acceptability as per IS 1077:1992, Clause 6.2(b)
1	Length	4610	4520 to 4680 mm
2	Width	2185	2160 to 2240 mm
3	Height	1390	1360 to 1440 mm

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ಮಾಹಿತಿ ಕೊಡುವುದು ಉಪ ನಿರ್ಧಾರ
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ಮಾಹಿತಿ ಕೊಡುವುದು ಉಪ ನಿರ್ಧಾರ

ಮಾಹಿತಿ ಕೊಡುವುದು ಉಪ ನಿರ್ಧಾರ
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST REPORT OF FINE AGGREGATE

Date: 17-04-2019

Lab ID : CP-2019-09-12-40
Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address : Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.
Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010
Customer's Reference : BBMP/EE/BTP/WO/75/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 15-04-2019
Sample Type : Fine Aggregate
Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 : 1963 (Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
Date of test : 15-04-2019

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result : The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID

: CP-2019-09-12-40

Date: 17-04-2019

F/01

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	—
2	Specific Gravity	2.59	—
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

Note:

The results pertain to the samples received and tested.
All information furnished by Customer/Representative
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Samples will be disposed after 90 days from the date of issue of test certificate



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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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****End of Report****

ಇತರರ ಕಾರ್ಯಪಾಲಕ ಅಧಿಕಾರಿಗಳು
ಬ್ಯಾಟಲಿಯನು ಹಾಗೂ ವಿಭಾಗ
ಮತ್ತು ಎಂ.ಪಿ. ಬೆಂಗಳೂರು

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AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005
4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Date: 21/06/2019

Lab ID : CP-2019-09-12-40
Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address : Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.
Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010
Customer's Reference : BBMP/EE/BTP/WO/75/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 17-06-2019
Customer ID : Sump Concrete
Sample Type /Size : 150X150X150 mm
Sample grade/Age : M20 / 7 Days Compressive Strength
Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/06/2019

Date of test : 21/06/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm ²)	(N/mm ²)
1	Sump Concrete	M20	14/06/2019	21/06/2019	150.17 X	22447	8.096	414.3	18.5	18.7
					149.48 X					
					149.90					
2	Sump Concrete	M20	14/06/2019	21/06/2019	150.99 X	22700	8.797	428.3	18.9	
					150.34 X					
					149.41					
3	Sump Concrete	M20	14/06/2019	21/06/2019	150.29 X	22525	8.965	420.3	18.7	
					149.88 X					
					150.40					

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Handwritten signatures and stamps in Kannada script.



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Quality Manager

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****End of Report****

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 12/07/2019

Lab ID : CP-2019-09-12-40
 Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
 Address : Byatarayanapura Sub Division, BBMP, Bangalore.
 Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.
 Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd. #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010
 Customer's Reference : BBMP/EE/BTP/WO/75/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 17-06-2019
 Customer ID : Sump Concrete
 Sample Type /Size : 150X150X150 mm
 Sample grade/Age : M20 / 28 Days Compressive Strength
 Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete CL5

Date of test : 12/07/2019

SL No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm ²)	Average Compressive Strength (N/mm ²)
1	Sump Concrete	M20	14/06/2019	12/07/2019	150.48 X 151.86 X 151.47	22852	8.754	545.1	23.9	23.3
2	Sump Concrete	M20	14/06/2019	12/07/2019	151.49 X 150.92 X 151.50	22862	8.452	510.6	22.3	
3	Sump Concrete	M20	14/06/2019	12/07/2019	150.89 X 151.01 X 149.64	22787	8.186	543.8	23.9	

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 Authorized Signatory
 Quality Manager



TEST REPORT OF CERAMIC TILES

Lab ID : CP-2019-09-12-40 Date: 27-04-2019

Customer : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Improvements of Existing Toilets at Hegadenagara in Ward No-06 Byatarayanapura Sub Division.

Agency : Executive Engineer, Karnataka Rural Infrastructure Development Ltd, #280, 59th Cross Road, 17th C Main Road, 3rd Y Block, Rajajinagara, Bangalore-560010

Customer's Reference : BBMP/EE/BTP/WO/75/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-04-2019

Sample Type/ Size : Ceramic tiles (400X400)mm

Reference to BIS codes : IS 13630 (part 1) : 2006, IS 15622:2006

Date of test : 23-04-2019

MEASUREMENTS OF LENGTH, WIDTH AND THICKNESS

Number Of Specimen	Length measured at position 5mm from the corner		Breadth measured at position 5mm from the corner		Thickness measured at thickest part, 4 diagonal segment			
	1	2	1	2	1	2	3	4
1	400	400	400	400	20.04	20.01	20.08	20.04
2	400	400	400	400	20.01	20.07	20.01	20.01
3	400	400	400	400	20.03	20.05	20.06	20.03
4	400	400	400	400	20.06	20.05	20.08	20.06
5	400	400	400	400	20.08	20.06	20.05	20.08
6	400	400	400	400	20.03	20.07	20.07	20.07
7	400	400	400	400	20.08	20.05	20.08	20.07
8	400	400	400	400	20.02	20.05	20.04	20.05
9	400	400	400	400	20.04	20.04	20.02	20.04
10	400	400	400	400	20.04	20.01	20.05	20.04
Average	400		300		20.05			

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TEST REPORT OF CERAMIC TILES

WATER ABSORPTION

Sl.no	Weight of oven dry sample	Saturated weight of sample	Water absorption by mass	Average value of water absorption
1	1406	1455	3.49	2.85
2	1424	1464	2.81	
3	1464	1498	2.32	
4	1408	1454	3.27	
5	1434	1468	2.37	

MODULUS OF RUPTURE AND BREAKING STRENGTH

Sl.No	Dimension (mm)			Wet Transverse Strength	Average
Sl.No.	L	B	T	(N/mm ²)	(N/mm ²)
1	400	400	20.04	14.8	14.66
2	400	400	20.06	14.2	
3	401	400	20.02	14.9	
4	400	400	20.06	14.8	
5	400	400	20.05	14.6	

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Authorized Signature

Quality Manager

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